



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,576	12/30/2005	Roger W. Carson	C & M	6621
7590 James C. Wray Suite 300 1493 Chain Bridge Road McLean, VA 22101		EXAMINER WILKINS III, HARRY D		
		ART UNIT 1795		
		DELIVERY MODE PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/560,576

**Applicant(s)**

CARSON ET AL.

**Examiner**

Harry D. Wilkins, III

**Art Unit**

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_\_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 October 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 178-207 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 178-188 and 192-207 is/are rejected.
- 7) ☒ Claim(s) 189-191 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 207 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 207 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: any structure of the apparatus. The claim only relates the apparatus to the materials to be treated by the apparatus, and does not claim any actual apparatus structure. See MPEP 2114.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 178-183, 186-188 and 204 are rejected under 35 U.S.C. 102(b) as being anticipated by Bremer et al (US 6,402,932).

Bremer et al anticipate the invention as claimed. Bremer et al teach (see abstract, figure 1 and col. 3, lines 9-56) a mediated electrochemical oxidation (MEO) apparatus comprising an electrochemical cell (17) including an aqueous electrolyte, a

ion selective membrane dividing the cell into anolyte and catholyte chambers, with an anolyte and an anode in the anolyte chamber and a catholyte and a cathode in the catholyte chamber. The apparatus also included a power supply connected to the anode and cathode for applying direct current.

Regarding the composition of the anolyte and the various processes claimed by Applicant in both the preamble and the body of the claim, such features relate to the intended use of the claimed structure. See MPEP 2114. Apparatus claims are defined by the claimed structural features and not by the manner in which the apparatus is used.

Further, Bremer et al teach (see col. 3, lines 15-22) use of mediator ions such as Ag, Ce, Co, Fe, Mn or Ru in nitric, sulfuric or phosphoric acid.

Regarding claim 179, Bermer et al teach (see figure 1) that the apparatus included two closed-loop systems, an electrolyte in each, and pumps (9 and 39) coupled to the closed-loop systems for circulating the electrolytes. The electrolytes were separated by a membrane (M) in the electrochemical cell. Each closed-loop included a drain (11 and 41).

Regarding claim 180, Bremer et al teach (see col. 6, lines 40-42) that the electrolyte containment boundary is composed of materials resistant to the oxidizing electrolyte, e.g.-PTFE.

Regarding claims 181 and 187, Bremer et al included thermal control units (7, 31) for each of the anolyte and catholyte for providing heating or cooling of each as needed.

Regarding claim 182, Bremer et al teach (see abstract) utilizing ultraviolet light in the anolyte chamber.

Regarding claim 183, Bremer et al included condensers (15, 36) for processing the off-gases from each of the anolyte and catholyte.

Regarding claim 186, Bremer et al teach (see col. 6, lines 40-42) that the electrolyte containment boundary is composed of materials resistant to the oxidizing electrolyte, e.g.-PTFE.

Regarding claim 188, Bremer et al include an air sparge (35) as claimed.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 184, 185, 192-203, 205 and 206 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bremer et al (US 6,402,932) in view of Carson et al (WO 03/031343).

Bremer et al is silent with respect to the addition of the various features of these dependent claims.

Carson et al teach (see figures 1A-4 and related description) the various features of these dependent claims as being beneficial to the control and operation of the mediated electrochemical oxidation treatment.

Therefore, it would have been obvious to one of ordinary skill in the art to have added the additional features of Carson et al to the apparatus of Bremer et al for improving the operation and controllability of the apparatus of Bremer et al.

### ***Double Patenting***

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claim 178 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 40-52 of U.S. Patent No. 7,479,215.

Although the conflicting claims are not identical, they are not patentably distinct from each other because each and every structural element required by the present claim is present in the claims of the '215 patent.

10. Claim 178 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 40-52 of U.S. Patent No. 7,531,080.

Although the conflicting claims are not identical, they are not patentably distinct from each other because each and every structural element required by the present claim is present in the claims of the '215 patent.

11. Claim 178 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 50-79 of U.S. Patent No. 7,517,445.

Although the conflicting claims are not identical, they are not patentably distinct from each other because each and every structural element required by the present claim is present in the claims of the '215 patent.

12. Claim 178 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 54-65 of U.S. Patent No. 7,387,719.

Although the conflicting claims are not identical, they are not patentably distinct from each other because each and every structural element required by the present claim is present in the claims of the '215 patent.

13. Claim 178 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 26-27 of U.S. Patent No. 7,488,409.

Although the conflicting claims are not identical, they are not patentably distinct from each other because each and every structural element required by the present claim is present in the claims of the '215 patent.

#### ***Terminal Disclaimer***

14. The terminal disclaimer filed on 14 October 2009 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US Patent No. 6,420,932 has been reviewed and is accepted. The terminal

disclaimer has been recorded. However, this does not obviate the double patenting rejections made on the other references. Further, the terminal disclaimer does not remove the reference as prior art under 35 U.S.C. 102(b).

***Allowable Subject Matter***

15. Claims 189-191 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry D. Wilkins, III whose telephone number is 571-272-1251. The examiner can normally be reached on M-F 9:00am-5:30pm.



If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jenni Michener can be reached on 571-272-1424. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Harry D Wilkins, III/  
Primary Examiner, Art Unit 1795

hdw